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means, and field sample depository means for receiving said sample from said secondary sampler means.

6. The device for sampling fluids, mixtures of fluids and solids, and emulsions as defined in claim 5 wherein said means for removing said sample of the fluid, mixture of fluids and solids, and emulsions from said sampling tube comprises solenoid valve means and vacuum pump means whereby the sample may be withdrawn from said sample tube by air pressure, and wherein said means for removing said sample from said sample receiving means comprises air pressure means to expel said sample to said field sample depository.

7. The device for sampling fluids, mixtures of fluids and solids, and emulsions as defined in claim 1 further comprising electrode wash means located interiorly to said sampling tube for spray washing said fluid, mixture of fluid and solid, and emulsion characteristic detecting means; and controller means for operably controlling said spray wash.

8. A process for sampling fluids, mixtures of fluids and solids, and emulsions comprising the steps of permitting the entrance of a sample of the fluid, mixture of fluids and solids, and emulsions into a sampling tube, permitting the sample to rise in the sampling tube, sens-

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ing the level of the sample in the sampling tube, measuring the characteristics of said sample, expelling said sample from said sampling tube, sensing the completion of the sample expelling step, and repeating said sampling steps.

9. The process of sampling fluids, mixtures of fluids and solids, and emulsions as defined in claim 8 further comprising the step of controlling the rate of rise of the sample in said sampling tube whereby solid particles in said fluid mixture may settle out permitting the detection of the sample in a clear liquor state.

10. The device for sampling agitated fluids, mixtures of fluids and solids, and emulsions as defined in claim 9 further comprising the steps of delaying the expulsion of the sample from said sampling tube and removing a portion of the sample in its clear liquor state.

11. The process for sampling agitated fluids, mixtures of fluids and solids, and emulsions as defined in claim 10 further comprising the step of receiving said portion of said sample removed from said sampling tube in a secondary sampler container, sensing the level of said portion received in said container, and transferring said portion received to a sample depository.

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